LT-8090-350/700 DMX512

Constant Current Decoder

User's Manual

(Kindly read through this manual carefully before use)

Foreword

Thanks for choosing our LT-8090 DMX512 Constant Current Decoder. Before installation and usage, we strongly recommend you to read through this manual carefully.

After-sales service

From the day you purchase our products within a year, if being used properly in accordance with the instruction, and quality problems occur, we provide free repair or replacement services except the following cases:

1. Any defects caused by wrong operations..
2. Any damages caused by unauthorized removal, maintenance, modifying circuit, incorrect connections and replacing chips.
3. Any damages due to transportation, vibration etc after the purchase.
4. Any damages caused by earthquake, fire, lightning strike, pollution and abnormal voltage.
5. Any damages caused by negligence, inappropriate storing at high temperature and humidity environment or near harmful chemicals.
6. Product has been updated.

Safety Warnings

1. Please don’t install this decoder in lightening, intense magnetic and high-voltage fields.
2. To reduce the risk of component damage and fire caused by short circuit, make sure correct connection
3. Always be sure to mount this unit in an area that will allow proper ventilation to ensure a fitting temperature.
4. Check if the voltage and power adapter suit the decoder & if anode or cathode definition is the same as the controller’s.
5. Don’t connect cables with power on； Make sure a correct connection and no short circuit checked with instrument before power on.
6. Please don’t repair without permission if problems occur.

For update information, kindly please consult with your supplier.

Function Brief

Thanks for choosing LT-8090-350/700 DMX512 Constant Current Decoder. LT-8090-350/700 is specially designed for high power LED lamps. LT-8090-350/700 Decoder has 3 output channels, outputs 350mA/700mA constant current PWM driving signal, each channel can realize 256 level grey control. Use DMX512 constant current decoder to directly control high power single/RGB color LED lamps without constant current IC, which do not need any extra circuit component, it could be connected with high power LED lamps in series.

Application Scope

DMX Constant Current Decoder can directly control 1W/3W high power LED single or RGB lamps such as spotlight, wall washer, flood light, down light, underwater lamp, high power module. It controls LED lamps to get all kinds of fantastic effects suit for different lamps and different circumstances.

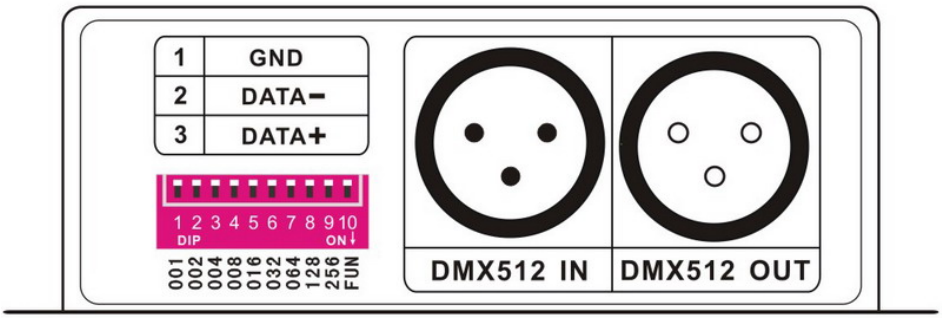
Ⅰ. Product Specifications:

Model:	LT-8090-350/LT-8090-700
Input Power:	DC12V--DC48V
Output Current:	LT-8090-350 output 350mA
	LT-8090-700 output 700mA
Driving LED qty:	LT-8090-350: 1-12 1W LED per Channel
	LT-8090-700: 1-12 3W LED per Channel
Grey Scale:	256 levels
Signal Input:	DMX512/1990
Signal Output:	3CH PWM Constant Current
DMX512 Socket:	Standard XLR-3
Product Dimension:	L125×W52×H40mm
Carton Size:	L135×W70×H50mm
Weight:	0.3KG

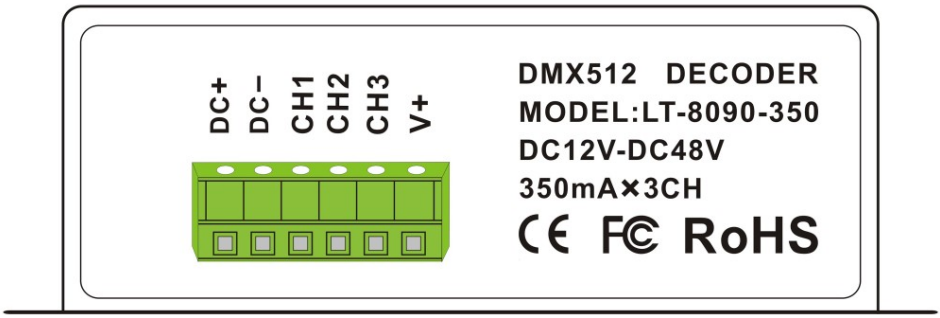
Ⅱ. Basic Functions

1.) 3 Output Channels, connect single/RGB color LED lamps;
2.) 0-100% brightness adjusting, 256 levels of grey scale per channel.
3.) Standard DMX512 input protocol, set address with dip-switch .
4.) Wide voltage input: DC12V-48V
5.) 10 testing modes, 8 levels of changing speed.
6.) 2 styles: 350mA and 700mA constant current output
7.) Each channel connects 1-12 1W/3W LED in series.

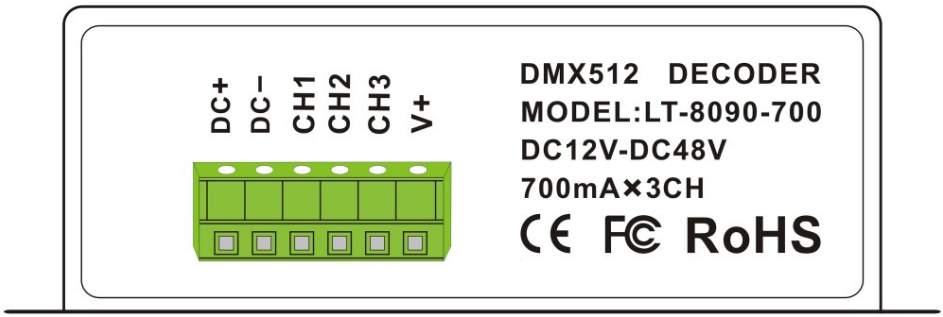
Ⅲ. Product Appearance



Input Port



Output Port of LT-8090-350



Output Port of LT-8090-700

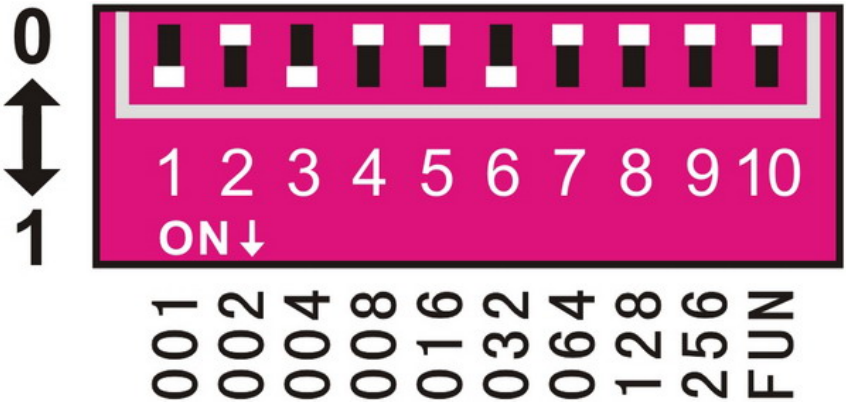
Ⅳ. Decoder address setting

This decoder occupies 3 addresses, adopted Dip switch to set the address, the Dip switches from 1 to 9 are a kind of binary value coding switches used to set DMX512 initial address code, the correlative bits is the 1-9 bits of the DIP switch, the 1st bit is LSC, the 9th bit MSC , 512 addresses totally.

DMX512 initial address code is equal to the total amount of the Dip switches' number from 1 to 9, press Dip switch downward (ON: at position "1"), user can get the number of its position, if pressing upward (at position "0"), the number of its position is 0.

Accept DMX512 signal only when the DIP switch FUN＝OFF (at position "0")

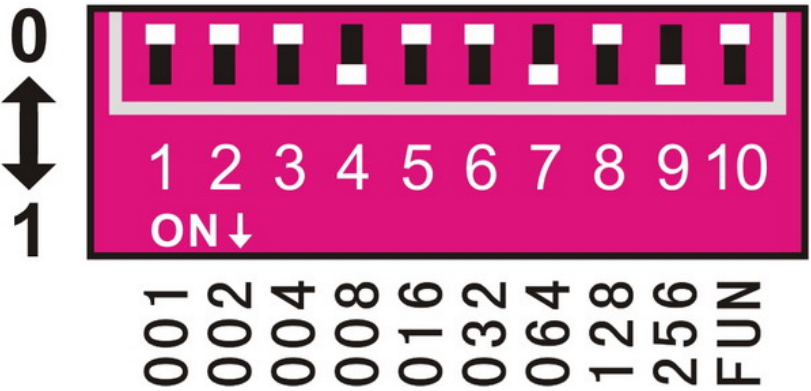
Example 1: Set to 37
Set the 6th, 3rd, 1st bit of the DIP switch downward to "1", others to "0" (picture 1), the total sum from 1 to 9 is 32+4+1, so the DMX512 initial address code is 37.



Picture 1

Example 2:

Set DMX512 original address code as 328: Set the 9th, 7rd, 4st bit of the DIP switch downward to “1”, the rest to “0” (as picture 2), the total sum from 1 to 9 is 256+64+8, so the DMX512 original address code is 328.

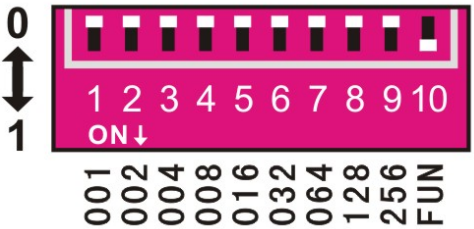


Picture 2

Ⅴ.Instructions for other functions

1、 Testing function：

The 10th DIP switch is FUN, acting as the function key.
DMX512 Decoder works when FUN is at OFF, receiving DMX512 signals.
Decoder testing mode works when FUN is at position" ON" as Picture 3:
SWITCH1－9 OFF：BLACK
SWITCH1 IS ON：RED
SWITCH2 IS ON: GREEN
SWITCH3 IS ON: BLUE
SWITCH4 IS ON: YELLOW
SWITCH5 IS ON: PURPLE
SWITCH6 IS ON: CYAN
SWITCH7 IS ON: WHITE

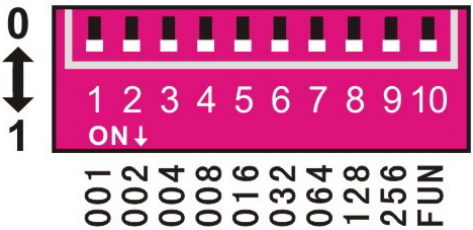


Picture 3

SWITCH8 IS ON: 7 CLOLOR JUMPING (8 SPEED LEVELS)
SWITCH9 IS ON: 7 COLOR SMOOTH (8 SPEED LEVELS)

2、 Color jumping & color smooth speed

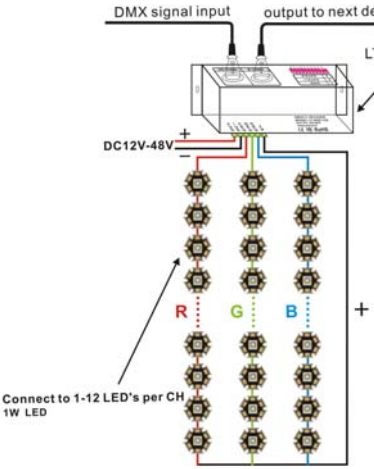
When decoder is at testing mode, DIP Switch 8 is at "ON", it's the 7 Color Jumping, when DIP Switch 9 is at "ON", it's the 7 Color Smooth, with 8 speed levels for each effect.
SWITCH 1－7 OFF：SPEED 0
SWITCH 1＝ON：SPEED 1
SWITCH 2＝ON：SPEED 2
SEITCH 3＝ON：SPEED 3
SWITCH 4＝ON：SPEED 4
SWITCH 5＝ON：SPEED 5
SWITCH 6＝ON：SPEED 6
SEITICH7＝ON：SPEED 7;



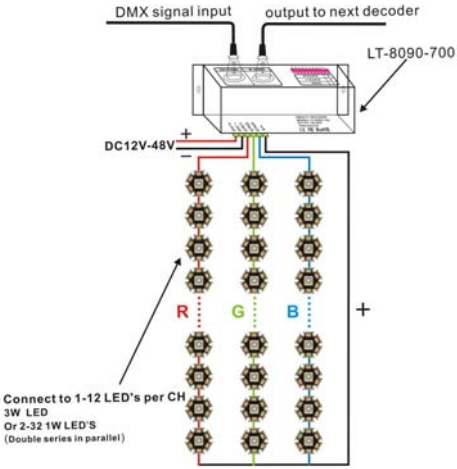
Picture 4

As Picture 4. When several DIP SWITCH at “ON” at the same time, comply with the largest value switch; In Picture4, it shows the decoder status is color smooth at testing function, and is at Speed 7.

Ⅵ. Conjunction Diagram for both 350mA and 700mA



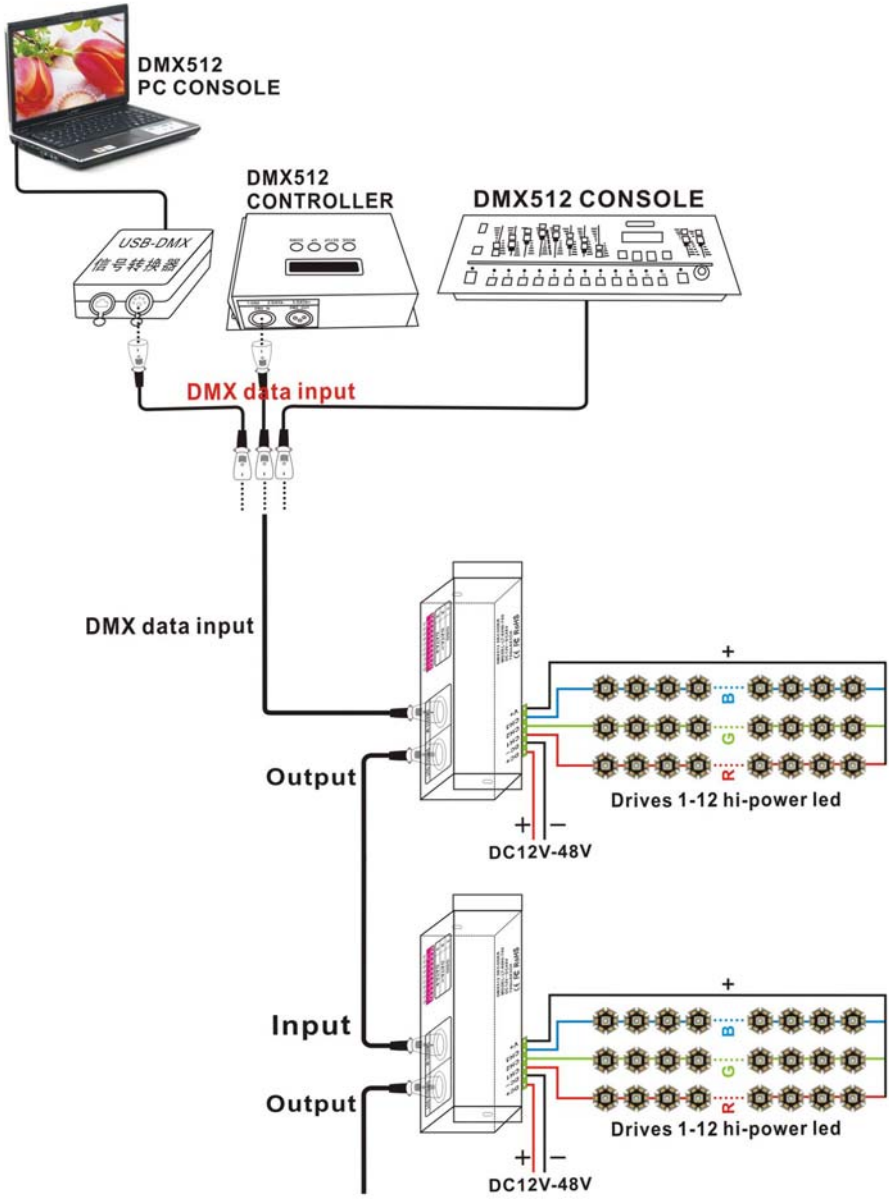
Picture5



Picture6

Ⅶ. System Conjunction Diagram

Decoder can connect with all kinds of standard DMX512 devices.


DMX512
PC CONSOLE
DMX512
CONTROLLER
DMX512 CONSOLE
USB-DMX
信号转换器
DMX data input
DMX data input
Output
+
B
G
R
Drives 1-12 hi-power led
+ −
DC12V-48V
Input
Output
+
B
G
R
Drives 1-12 hi-power led
+ −
DC12V-48V

Picture7

DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
100000000	001	001110000	028	111011000	055
010000000	002	101110000	029	000111000	056
110000000	003	011110000	030	100111000	057
001000000	004	111110000	031	010111000	058
101000000	005	000001000	032	110111000	059
011000000	006	100001000	033	001111000	060
111000000	007	010001000	034	101111000	061
000100000	008	110001000	035	011111000	062
100100000	009	001001000	036	111111000	063
010100000	010	101001000	037	000000100	064
110100000	011	011001000	038	100000100	065
001100000	012	111001000	039	010000100	066
101100000	013	000101000	040	110000100	067
011100000	014	100101000	041	001000100	068
111100000	015	010101000	042	101000100	069
000010000	016	110101000	043	011000100	070
100010000	017	001101000	044	111000100	071
010010000	018	101101000	045	000100100	072
110010000	019	011101000	046	100100100	073
001010000	020	111101000	047	010100100	074
101010000	021	000011000	048	110100100	075
011010000	022	100011000	049	001100100	076
111010000	023	010011000	050	101100100	077
000110000	024	110011000	051	011100100	078
100110000	025	001011000	052	111100100	079
010110000	026	101011000	053	000010100	080
110110000	027	011011000	054	100010100	081

DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
010010100	082	101101100	109	000100010	136
110010100	083	011101100	110	100100010	137
001010100	084	111101100	111	010100010	138
101010100	085	000011100	112	110100010	139
011010100	086	100011100	113	001100010	140
111010100	087	010011100	114	101100010	141
000110100	088	110011100	115	011100010	142
100110100	089	001011100	116	111100010	143
010110100	090	101011100	117	000010010	144
110110100	091	011011100	118	100010010	145
001110100	092	111011100	119	010010010	146
101110100	093	000111100	120	110010010	147
011110100	094	100111100	121	001010010	148
111110100	095	010111100	122	101010010	149
000001100	096	110111100	123	011010010	150
100001100	097	001111100	124	111010010	151
010001100	098	101111100	125	000110010	152
110001100	099	011111100	126	100110010	153
001001100	100	111111100	127	010110010	154
101001100	101	000000010	128	110110010	155
011001100	102	100000010	129	001110010	156
111001100	103	010000010	130	101110010	157
000101100	104	110000010	131	011110010	158
100101100	105	001000010	132	111110010	159
010101100	106	101000010	133	000001010	160
110101100	107	011000010	134	100001010	161
001101100	108	111000010	135	010001010	162

DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
110001010	163	011111010	190	100110110	217
001001010	164	111111010	191	010110110	218
101001010	165	000000110	192	110110110	219
011001010	166	100000110	193	001110110	220
111001010	167	010000110	194	101110110	221
000101010	168	110000110	195	011110110	222
100101010	169	001000110	196	111110110	223
010101010	170	101000110	197	000001110	224
110101010	171	011000110	198	100001110	225
001101010	172	111000110	199	010001110	226
101101010	173	000100110	200	110001110	227
011101010	174	100100110	201	001001110	228
111101010	175	010100110	202	101001110	229
000011010	176	110100110	203	011001110	230
100011010	177	001100110	204	111001110	231
010011010	178	101100110	205	000101110	232
110011010	179	011100110	206	100101110	233
001011010	180	111100110	207	010101110	234
101011010	181	000010110	208	110101110	235
011011010	182	100010110	209	001101110	236
111011010	183	010010110	210	101101110	237
000111010	184	110010110	211	011101110	238
100111010	185	001010110	212	111101110	239
010111010	186	101010110	213	000011110	240
110111010	187	011010110	214	100011110	241
001111010	188	111010110	215	010011110	242
101111010	189	000110110	216	110011110	243

DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
001011110	244	111100001	271	010101001	298
101011110	245	000010001	272	110101001	299
011011110	246	100010001	273	001101001	300
111011110	247	010010001	274	101101001	301
000111110	248	110010001	275	011101001	302
100111110	249	001010001	276	111101001	303
010111110	250	101010001	277	000011001	304
110111110	251	011010001	278	100011001	305
001111110	252	111010001	279	010011001	306
101111110	253	000110001	280	110011001	307
011111110	254	100110001	281	001011001	308
111111110	255	010110001	282	101011001	309
000000001	256	110110001	283	011011001	310
100000001	257	001110001	284	111011001	311
010000001	258	101110001	285	000111001	312
110000001	259	011110001	286	100111001	313
001000001	260	111110001	287	010111001	314
101000001	261	000001001	288	110111001	315
011000001	262	100001001	289	001111001	316
111000001	263	010001001	290	101111001	317
000100001	264	110001001	291	011111001	318
100100001	265	001001001	292	111111001	319
010100001	266	101001001	293	000000101	320
110100001	267	011001001	294	100000101	321
001100001	268	111001001	295	010000101	322
101100001	269	000101001	296	110000101	323
011100001	270	100101001	297	001000101	324

DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
101000101	325	000001101	352	110111101	379
011000101	326	100001101	353	001111101	380
111000101	327	010001101	354	101111101	381
000100101	328	110001101	355	011111101	382
100100101	329	001001101	356	111111101	383
010100101	330	101001101	357	000000011	384
110100101	331	011001101	358	100000011	385
001100101	332	111001101	359	010000011	386
101100101	333	000101101	360	110000011	387
011100101	334	100101101	361	001000011	388
111100101	335	010101101	362	101000011	389
000010101	336	110101101	363	011000011	390
100010101	337	001101101	364	111000011	391
010010101	338	101101101	365	000100011	392
110010101	339	011101101	366	100100011	393
001010101	340	111101101	367	010100011	394
101010101	341	000011101	368	110100011	395
011010101	342	100011101	369	001100011	396
111010101	343	010011101	370	101100011	397
000110101	344	110011101	371	011100011	398
100110101	345	001011101	372	111100011	399
010110101	346	101011101	373	000010011	400
110110101	347	011011101	374	100010011	401
001110101	348	111011101	375	010010011	402
101110101	349	000111101	376	110010011	403
011110101	350	100111101	377	001010011	404
111110101	351	010111101	378	101010011	405

DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
011010011	406	100011011	433	001100111	460
111010011	407	010011011	434	101100111	461
000110011	408	110011011	435	011100111	462
100110011	409	001011011	436	111100111	463
010110011	410	101011011	437	000010111	464
110110011	411	011011011	438	100010111	465
001110011	412	111011011	439	010010111	466
101110011	413	000111011	440	110010111	467
011110011	414	100111011	441	001010111	468
111110011	415	010111011	442	101010111	469
000001011	416	110111011	443	011010111	470
100001011	417	001111011	444	111010111	471
010001011	418	101111011	445	000110111	472
110001011	419	011111011	446	100110111	473
001001011	420	111111011	447	010110111	474
101001011	421	000000111	448	110110111	475
011001011	422	100000111	449	001110111	476
111001011	423	010000111	450	101110111	477
000101011	424	110000111	451	011110111	478
100101011	425	001000111	452	111110111	479
010101011	426	101000111	453	000001111	480
110101011	427	011000111	454	100001111	481
001101011	428	111000111	455	010001111	482
101101011	429	000100111	456	110001111	483
011101011	430	100100111	457	001001111	484
111101011	431	010100111	458	101001111	485
000011011	432	110100111	459	011001111	486

DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
111001111	487	000011111	496	100111111	505
000101111	488	100011111	497	010111111	506
100101111	489	010011111	498	110111111	507
010101111	490	110011111	499	001111111	508
110101111	491	001011111	500	101111111	509
001101111	492	101011111	501	011111111	510
101101111	493	011011111	502	111111111	511
011101111	494	111011111	503		
111101111	495	000111111	504		